

A NEW GENUS AND TWO NEW SPECIES OF ANTILLOCORINI
FROM THE NEOTROPICS, WITH NOTES ON RELATED TAXA
(HEMIPTERA: LYGAEIDAE)¹

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Abstract.—*Schuhocoris gracilis* is described as a new genus and species of Antillocorini from Peru, Brazil and Panama. Its phylogenetic position is discussed. The dorsal aspect of the adult and anatomical details of the abdomen, paramere, and sperm reservoir are illustrated. *Paradema antennata* is described as a new species from Brazil. There is a discussion of variability in *Paradema oculata* Slater. New records include *Bathydema cubana* from Puerto Rico and *Caeneusia obrienorum* from Brazil.

The tribe Antillocorini in the Neotropics has been the subject of two recent papers (Slater, Sweet, and Baranowski, 1977; Slater, 1980). Recently I have had the opportunity to study additional material including a striking new genus with a somewhat ozophorine habitus and an undescribed species of *Paradema*. Also included is additional information on several previously described species. All measurements are in millimeters.

Schuhocoris NEW GENUS

Dorsal surface chiefly pruinose. Head and abdomen subshining, remainder of body dull. Head granulose not conspicuously punctate. Pronotum, scutellum and hemelytra coarsely punctate; clavus with three distinct rows of punctures. Head non-declivent, vertex strongly convex. Pronotum with lateral margins deeply sinuate, much broader across rounded humeri than across anterior lobe; margins bluntly calloused or "subcarinate"; transverse impression complete; calli little differentiated from remainder of pronotal surface. Posterior margin of pronotum straight before base of scutellum, produced laterad of scutellum posteriorly as rounded lobes. Scutellum with a prominent Y-shaped elevation. Apical corial margin shallowly concave near inner end. Hemelytral membrane hyaline. Gular trough elongate, nearly reaching base of head, terminating in a tapering acute point. Metathoracic scent gland auricle strongly curved posteriorly so that distal end projects caudally. Evaporative area occupying only inner 1/2 of metapleuron, convexly rounded on outer margin. Abdomen with well developed scent gland scars present between terga 3-4, 4-5, and 5-6. Inner laterotergites present on segments 4, 5, and 6 (Fig. 2). All spiracles ventral, those of sterna 3, 4, and 5

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located on sternum below sternal shelf (Fig. 6). Suture between sterna 3 and 4 reaching marginal shelf, that between sterna 4 and 5 obsolete dorsally. Trichobothria of sternum 5 located as follows: anterior trichobothrium placed near 3–4 suture; two posterior trichobothria located close together dorso-ventrally and well forward of spiracle of abdominal sternum 5 (Fig. 6). Antennae very elongate and slender, terete; first segment slightly "bent," exceeding apex of tylus by more than $\frac{1}{2}$ its length. Legs elongate, slender. Fore femora not incrassate, mutic. Ovipositor short, not dividing 6th sternum. Posterior margin of 6th abdominal sternum with a small truncate median posteriorly produced projection. Sperm reservoir of "generalized" type, not reduced; ejaculatory tube not greatly enlarged (Figs. 4, 5).

Type species: *Schuhocoris gracilis* new species.

It is a pleasure to dedicate this interesting genus to Randall T. Schuh (American Museum Natural History) for his important contributions to the systematics of the Hemiptera.

The systematic position of *Schuhocoris* within the Antillocorini and its perplexing "mix" of characters is an indication of how much remains to be understood of the phylogeny of these interesting insects. *Schuhocoris* will not run to any genus in my (Slater, 1980) key to Western Hemisphere genera. The apical corial margin is only slightly concave which might cause it to be assigned to the first half of couplet 1 where it would run to *Paradema* at couplet 2. It is not at all related to this genus which has rounded lateral pronotal margins, an only slightly posteriorly curved metathoracic scent gland auricle, spiracle four located on the sternal shelf, etc. More importantly, as discussed below, *Schuhocoris* has a conventional sperm reservoir and thus lacks the enormously enlarged ejaculatory reservoir of *Paradema* (see Slater, 1980). If one follows the second half of couplet 1, *Schuhocoris* will key to *Antillocoris* at couplet 10 (except for the position of spiracle four). It differs from *Antillocoris* in many ways: general habitus (body elongate and slender in *Schuhocoris*, short and stout in *Antillocoris*); spiracle of abdominal sternum 4 located below the sternal shelf in *Schuhocoris*, on the shelf in *Antillocoris*. *Antillocoris* lacks a well developed scent gland opening between terga 3–4, in *Schuhocoris* it is strongly developed; in *Antillocoris* the posterior trichobothria are located below spiracle 5, in *Schuhocoris* well anterior to it. In *Schuhocoris* the metapleuron is pruinose, in *Antillocoris* it is shining.

The systematic position of *Schuhocoris* within the Antillocorini is very interesting but also perplexing. My (Slater, 1980) cladogram of Western Hemisphere antillocorine genera is inadequate to accommodate this genus. In that cladogram the development of the incomplete suture between sterna 4 and 5 is hypothesized as having been evolved twice. This does not present a problem here as in one case (*Paradema*) the suture loss is in a clade with taxa having highly apomorphic sperm reservoirs and ejaculatory ducts. In *Schuhocoris* the reservoir and duct clearly show the plesiomorphic condition (Figs. 4, 5). *Schuhocoris* thus clearly belongs to the alternate clade for while it does not have elongate body hairs and the apical corial margin is only shallowly concave, the lateral pronotal margins are conspicuously calloused, the spiracle on abdominal tergum 4 lies below the sternal shelf and the abdominal scent gland openings between terga 3–4 are well developed.

My 1980 cladogram has three factual mistakes. (1.) There is no synapomorphy

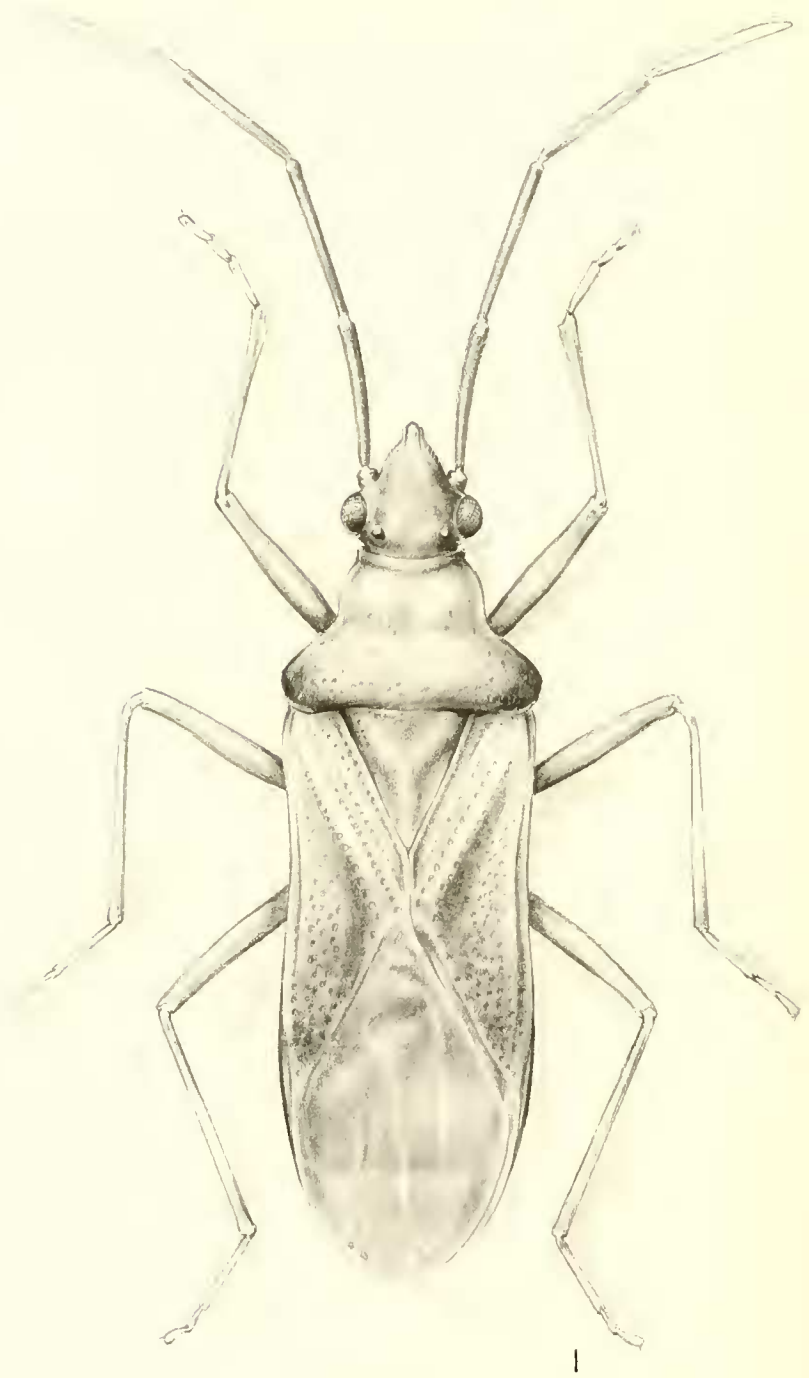
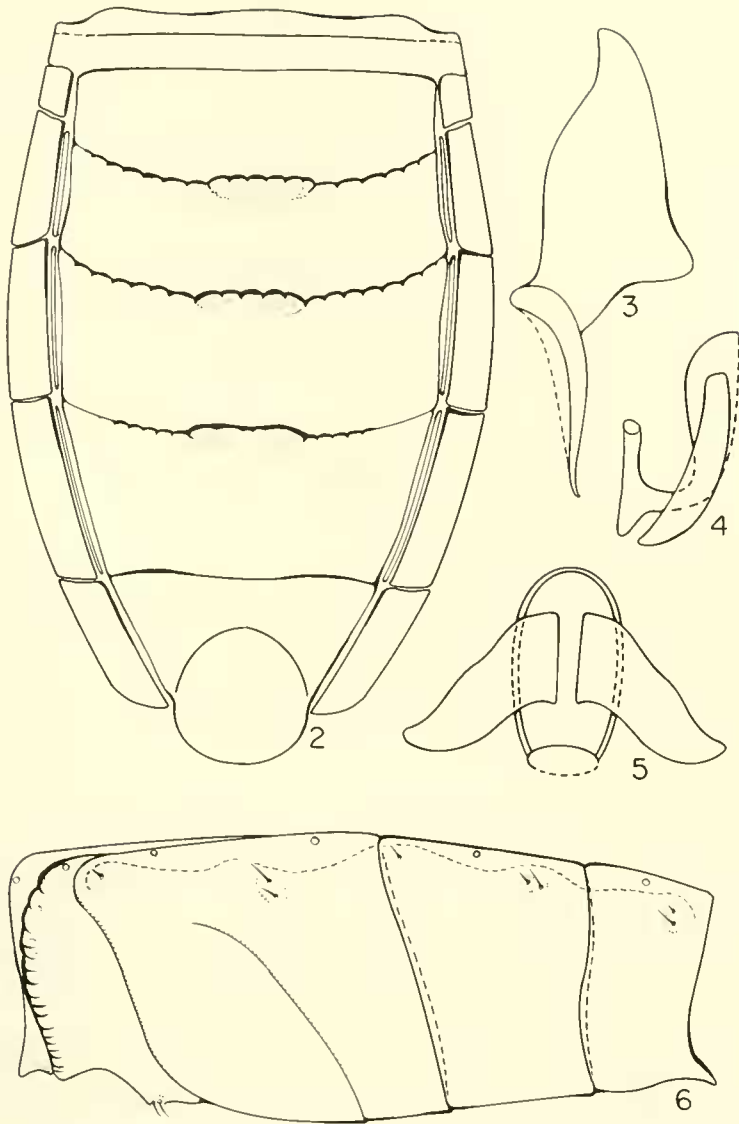


Fig. 1. *Schuhocoris gractis*, dorsal view.



Figs. 2-6. *Schuhocoris gracilis*. 2, Abdomen, dorsal view. 3, Paramere, 4, Sperm reservoir, lateral view. 5, Sperm reservoir, dorsal view. 6, Abdomen, lateral view.

in the cladogram linking *Paurocoris*, *Botocudo* and *Cligenes*. This was a lapsus and the synapomorphy should be "pronotal margins carinate." However, there are a number of species at present placed in *Botocudo* where the lateral pronotal margins are actually calloused rather than sharply carinate. (2.) Some species now placed in *Botocudo* have the posterior trichobothria of sternum five placed dorso-ventrally rather than being on the same level (linear). It is obvious that a study of species now considered to belong to *Botocudo* must at least have reached the

stage where the basic "groups" can be established before the phylogeny of the *Antillocorini* can be much better understood. (3.) The statement that the deeply grooved prosternum is a synapomorphy that will distinguish *Cligenes* from *Botocudo* is true for the type species *Cligenes distinctus* but is not true of *Cligenes subcavicola* Scudder, Darlington, and Hill.

Schuhocoris shows derived conditions in the placement of the abdominal spiracles, strongly posteriorly curved scent gland auricle, calloused pronotal margins and contrastingly shining head and pruinose body. The well-developed 3-4 abdominal scent gland auricle precludes it at present from the clade with *Antillocoris* and its allies. However, that clade is based on a loss character. I suggest that until the complexity of *Botocudo* is better understood that *Schuhocoris* should be tentatively considered as the plesiomorphic sister group of the *Antillocoris* et al. clade, which has retained the original 3 abdominal scent gland condition and has an only slightly concave apical corial margin.

Schuhocoris gracilis NEW SPECIES

Figs. 1-6

General coloration nearly uniformly bright reddish brown including antennal segments 1, 2, and 3, becoming slightly darker on distal 1/2 of corium. Fourth antennal segment completely white. Legs uniformly pale yellow. Body clothed above with scattered, short, but rather conspicuous, erect or suberect hairs.

Head acuminate anteriorly. Eyes large, occupying most of lateral head surface but set away from antero-lateral pronotal margin. Ocelli conspicuous, elevated, set much closer to compound eye than to one another. Head length 0.60, width 0.60, interocular space 0.30. Pronotum with well defined punctate anterior "collar" area; posterior lobe more elevated than anterior but broadly depressed in middle. Pronotal length 0.64, width across anterior lobe 0.66, width across humeri 1.10. Scutellar length 0.54, width 0.56. Hemelytra with lateral corial margins nearly straight, very shallowly concave at level of apex of scutellum; radial vein strongly elevated. Length of claval commissure 0.26. Midline distance apex clavus-apex corium 0.60. Midline distance apex corium-apex membrane 0.76. Abdomen with areas about bases of trichobothria pale, pruinose and conspicuously differentiated from subshining abdominal surface. Labium extending between mesocoxae, first segment remote from base of head. Labial segment lengths I 0.40, II 0.38, III 0.30, IV 0.26. Antennal segment length I 0.64, II 0.72, III 0.60, IV 0.64. Total body length 3.48.

Bulb of sperm reservoir elongate-elliptical. Reservoir wings sloping moderately caudally, elongate tapering (Fig. 5). Basal area of ejaculatory duct with a right angled curvature with a short thick basally directed projection at angle (Fig. 4). Paramere broad, without an inner projection, but produced along outer margin (Fig. 3).

Holotype: ♂ PERU: Junin: San Ramon de Pangoa, 40 km SE Satipo, 750 meters, (soil litter layer in high secondary forest), 25.III.1972 (R. T. & J. C. Schuh). In American Museum Natural History. Paratypes: 1 ♂, 1 ♀, same data as holotype. 5 ♂, 7 ♀, same 23.III.1972. 1 ♂, same 30.I.1974. PANAMA: 1 ♀, Bocas d. T. Corriente Grande, 100 meters, 9°17'30"N, 82°32'11"W, 4.IV.1980 (Henk Wolda). BRAZIL: 1 ♂, Sao Paulo, Jacupiranga XII.1963 (F. Plaumann). 1 ♂, Rio de Janeiro, Silva Jardim, VIII.1974 (F. M. Oliveira). In American Museum of Natural His-

tory, Instituto de Biología UNAM Mexico D.F., P. D. Ashlock and J. A. Slater collections.

Three specimens show antennal oligomery. In one specimen (from Brazil) the second and third segments of the right antenna appear to be fused to form an elongate segment, with segments one and "four" normal. Two Peruvian specimens have the left antenna identically modified. In these specimens the left antenna although three segmented is nearly as long as the right antenna, but the second segment is longer than the normal second. The third (terminal segment) is mostly white but has a dark brown basal portion which suggests that there has been fusion of the normal third and fourth segments.

This species probably is part of the large fauna of Lygaeidae that feed on the fallen seeds of *Ficus*. R. T. Schuh took an adult and nymphs representing two instars at the type locality on 30.I.1974 below a large fig tree in litter that contained an abundance of fig seeds.

DESCRIPTION OF NYMPHS

Third Instar Nymph (type locality).—Head, legs and first three antennal segments dull yellow, fourth antennal segment white. Head suffused with brown posteriorly behind eyes. Thorax above and below nearly uniformly brown. Abdomen mottled with red. First abdominal tergum with a narrow transverse well differentiated strap-like sclerite across central area. Dorsal abdominal scent gland openings present and of equal width between terga 3–4, 4–5, and 5–6. None of these openings surrounded by extensive darkened sclerotized plates. Sterna also lacking median sclerotized plates. Sternum 7 with a conspicuous median spine at posterior margin (as in adults).

Head convex across vertex; epicranial stem well developed. Tylus extending only to proximal $\frac{1}{2}$ of first antennal segment. Head length 0.54, width 0.42, interocular space 0.28. Pronotum subquadrate. Pronotal length 0.28, width 0.50. Mesothoracic wing pads very slightly produced over antero-lateral margins of metanotum. Wing pad length 0.20. Abdomen much broader than head or thorax, maximum width (across segment 5) 0.88. Labium slightly exceeding metacoxae, first segment remote from base of head. Labial segment lengths I 0.30, II 0.38, III 0.24, IV 0.24. Antennal segment lengths I 0.44, II 0.44, III 0.40, IV 0.48. Total body length 2.30.

Fifth Instar Nymph (from type locality).—General coloration and structure as above but with head, thorax and mesothoracic wing pads nearly uniformly dull yellow. Reddish coloration of abdomen obscure. Pronotum more strongly tapering from humeral angles to anterior margin with lateral margins acute and slightly concave. Mesothoracic wing pads almost attaining suture between abdominal terga three and four. Labium extending posteriorly only between mesocoxae. Head length 0.68, width 0.60, interocular space 0.40. Pronotal length 0.46, width 0.80. Mesothoracic wing pad length 1.00. Abdominal length 1.56. Labial segment lengths I 0.38, II 0.50, III 0.26, IV 0.26. Antennal segment lengths I 0.70, II 0.70, III 0.58, IV 0.66. Total body length 3.24.

Paradema antennata NEW SPECIES

Head and anterior pronotal lobe black, former shining, latter covered with gray pruinosity except for two large quadrate calli patches. Pronotal pruinosity con-

Table 1. Comparison of interocular distance and antennal segment lengths in females of *Paradema oculata* Slater and *Paradema antennata* new species.

	N	Interocular Distance		Length of Antennal Segments					
		Mean	Range	II		III		IV	
				Mean	Range	Mean	Range	Mean	Range
<i>antennata</i>	3	.53	(.50-.54)	.82	(.78-.84)	.53	(.50-.56)	.85	(.82-.88)
<i>oculata</i>									
Rio Calceone	8	.48	(.46-.48)	.70	(.66-.74)	.47	(.46-.50)	.58	(.56-.58)
Serra Lombard	7	.49	(.48-.52)	.70	(.68-.76)	.48	(.46-.54)	.57	(.54-.66)
Serra do Navio	5	.50	(.50)	.77	(.70-.80)	.52	(.48-.54)	.60	(.60)

tinued as a posteriorly tapering 'V' on meson of anterior $\frac{2}{3}$ of posterior pronotal lobe; a broad dark brown area present on either side of this pruinosity and on humeral angles; remainder of posterior pronotal lobe yellow. Scutellum dark reddish-brown, elevated areas paler. Hemelytra variegated, dark red brown and yellow to almost white. Pale hemelytral markings as follows: an elongate streak on basal $\frac{1}{2}$ of clavus just within claval suture and entire distal end of clavus; a stripe on basal $\frac{1}{2}$ of corium adjacent to claval suture and a second interrupted stripe running along outer margin of corial furrow to level of end of claval commissure; most of lateral explanate corial flange (but with dark patches at level of middle of scutellum, at level of end of claval commissure and at apex of corium); the pale area between dark apex and median dark area extending inward as a broad comma-shaped macula. Membrane with variegated patches of dark and light coloration. Antennae almost uniformly dark red brown. Femora darkened subdistally, with pale distal ends; fore femora darker than middle and hind femora. Remainder of legs pale yellow except for third tarsal segment which is dark red brown. Body surface as in *oculata* with numerous elongate upstanding hairs present.

Body shape and proportions as in *oculata*. Labium extending between metacoxae. Fore femora with a prominent ventral spine. Head length 0.66, width 0.90, interocular space 0.54. Pronotal length 1.02, width 1.46. Scutellar length 0.90, width 0.78. Midline distance apex clavus-apex corium 1.00. Midline distance apex corium-apex membrane 0.60. Labial segment lengths I 0.70, II 0.74, III 0.54, IV 0.36. Antennal segment lengths I 0.40, II 0.84, III 0.56, IV 0.88. Total body length 4.60.

Holotype: ♀ BRAZIL: Marituba 24.X.1961 (J. & B. Bechyné). In American Museum Natural History. Paratypes: 1 ♀ same data as holotype. 1 ♀ same 1.VI.1961. In P. D. Ashlock and J. A. Slater collections.

P. antennata is certainly closely related to *P. oculata* Slater, agreeing with the latter in having a fore femoral spine, similar protruding eyes, and in pronotal shape, color and overall habitus. *P. antennata* may eventually prove to be a subspecific geographic isolate of *oculata*. However, the extremely elongate fourth antennal segment of *antennata* falls so far out of the range of *oculata* that a distinct population is evident and I am according it specific status at this time (Tables 1 and 2). The length of the fourth antennal segment of *oculata* as given by Slater (1980) has the numbers reversed. The length is 0.62 not 0.26 mm.

Table 2. Ratios of interocular distance to antennal segment III and of antennal segment III to antennal segment IV in females of *Paradema antennata* and *Paradema oculata*.

	N	Ratio Antennal Segment IV/ Interocular Distance		Ratio Antennal Segment IV/ Antennal Segment III	
		Mean	Range	Mean	Range
<i>antennata</i>	3	1.61	(1.59–1.64)	1.60	(1.57–1.64)
<i>oculata</i>					
Rio Calceone	8	1.22	(1.17–1.26)	1.22	(1.16–1.26)
Serra Lombard	7	1.16	(1.08–1.27)	1.20	(1.13–1.26)
Serra do Navio	5	1.20	(1.20)	1.15	(1.07–1.25)

All three females of *antennata* have the lateral corial margins evenly meeting the membrane which, if its remains constant when a larger series is available, will separate *antennata* from those females of *oculata* with an angulate corial-membrane junction (see below).

Paradema oculata Slater

Paradema oculata Slater, 1980: 214–215.

This species was originally described from the holotype male from Colombia and a single paratype female from Guyana. It was readily distinguishable by being the only member of the genus to have a ventral spine on the fore femur. It was placed in a group with *longisetosa* Slater and *bathydemoides* Slater, characterized by the lateral corial margins of the females joining the membrane at a distinct angle.

P. D. Ashlock has recently made available for study a long series representing several Brazilian localities. To my surprise this material clearly indicates that the condition of the corial membrane junction is variable in females of this species. This suggests caution in the use of couplet 2 of my (Slater, 1980) key to species as the condition could prove to be variable in other species as well.

There is evidently geographic variation in the expression of this feature as may be seen in Table III. There do not seem to be any other significant differences between these populations, and one must conclude that we are dealing with a single species.

Bathydema cubana Slater & Baranowski

Bathydema cubana Slater and Baranowski, 1977: 349, 351.

Slater, Sweet, and Baranowski (1977) recognized eight species in the genus *Bathydema* and subdivided the genus into three groups. Of these the “*obscura*-group” has subsequently been elevated to generic status under the name *Antilodema* by Slater (1980).

The “*darlingtoni*-group” comprised three species, one each on the Greater Antillean Islands of Jamaica (*darlingtoni*), Cuba (*cubana*) and Hispaniola (*hispaniola*).

Through the kindness of Drs. C. W. and L. B. O'Brien, I have now been able to examine the first specimens of *Bathydema* from Puerto Rico, a macropterous female from “Guilarte For. Res. Hwy. 131 & 158, 23.VI.1979 (G. B. Marshall)”

Table 3. Comparison of corial margin conditions in *Paradema oculata* Slater.

Locality	N		Number with Angulate Corial Margins	Number with Non-angulate Corial Margins
	Males	Females	Females	Females
Rio Calceone Ig. do Tigre Brazil 6/8.8 1961 (J. & B. Bechyne)	2	8	8	
Serra Lombard, Limão, Brazil (J. & B. Bechyne)				
2.8.1961		1	1	
15.8.1961	1	1	1	
20.8.1961		1		1
21.8.1961		1	1	
27.8.1961	1	2	2	
31.8.1961		1	1	
19.8.1961	1			
1.9.1966	2			
Serra do Navio, Brazil 11.7.1961 (J. & B. Bechyne)	7	6		6
Regina, Brazil 14.8.1961 (J. & B. Bechyne)		1	1	
Ozémar, Brazil (Diniz)	1			

and a macropterous male and two females from "Carib. N.F. el Toro Negro D Hwy. 143, K16H4, 21.VII.1979 (L. B. O'Brien)" (in J. A. Slater collection). They will key to *cubana* in Slater, Sweet, and Baranowski (1977) although the head ratios differ slightly from those given for *cubana*. Measurements of the Guilarte For. Res. specimen are: head length 0.44, width 0.60, interocular space 0.34; ratio width head/interocular space 1.76, ratio length head/interocular space 1.29. All of the specimens resemble Cuban material in being of a predominantly dark color. *Bathydema cubana* has a much shorter head than does *hispaniola*. While these specimens may represent a distinct species they are so similar to *cubana* that specific recognition does not seem warranted.

It is important to note that the "darlingtoni-group" (the plesiomorphic one) is now known from all of the four main islands of the Greater Antilles.

Caeneusia obrienorum Slater

Caeneusia obrienorum Slater, 1980: 211-212.

This species was originally described from near Tingo Maria, Peru. I have recently examined a single typical female from Serra Lombard, Brazil (2.VIII.1961 J. & B. Bechyne).

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